

Remarks:

Claims 1, 2, and 14-21 were pending in the last Office Action. Applicant has canceled claims 3-13 without prejudice or disclaimer, amended claims 1 and 17, and added new, independent claim 22. Thus, claims 1-2, 17-19, and 22 are currently pending, with claims 1, 17, and 22 being independent.

Applicant first notes that a personal Interview with the Examiner was held on January 25, 2005, in the pending parent application, U.S. Application No. 10/103,433. Although the claims of the present divisional application were not discussed, the primary reference of U.S. Patent No. 3,489,243 to Prescott, cited in both the parent and divisional applications, was discussed with respect to the claims pending in the parent application. Therefore, Applicant below references the Examiner's remarks during the Interview with respect to the teachings of Prescott, and Applicant believes the Examiner's remarks about Prescott are applicable to the present application.

In the last Office Action, the Examiner rejected claims 1, 2, and 14-21 under 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner stated that the limitation of the boom was not a claimed element and thus rendered the claims indefinite. Applicant submits that the limitation of the movable boom was recited in the preamble of each of the independent claims. Therefore, there was proper antecedent basis for recitation of the boom in the body of the independent claims and in any dependent claims, and Applicant thus respectfully requests withdrawal of this rejection.

The Examiner also rejected claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Prescott. Applicant has amended the independent claims to recite numerous structural features that in combination present a functional feature, namely a dielectric gap sufficient to protect a user of an aerial boom from damaging or deadly electric current. With respect to all but one of the structural features, the Examiner insists that Prescott teaches or suggests such. The Examiner to date has yet to give due consideration to the feature produced by the claimed structural combination, i.e., the dielectric gap.

It is Applicant's position that the rod-like members 36,38 disclosed in Prescott are not sufficiently external to the boom to produce a dielectric gap sufficient to protect a worker from hazardous electrical current. In fact, the rod-like members 36,38 are not external to the boom whatsoever; it is the actuator 34, the mechanism 74, the bell cranks 76, the pin 78, the fingered bar 80, and the handles 72 that are external to the boom. (See Fig. 6). None of the members is noted by Prescott as being non-conductive, whereas Prescott affirmatively notes that the rod-like members 36,38 are comprised of a non-conducting material. (See column 2, lines 3-4). If Prescott does not teach that the actuator 34, the mechanism 74, the bell cranks 76, the pin 78, the fingered bar 80, and the handles 72 are comprised of a non-conducting material, such cannot simply be assumed.

Applicant also submits that the actuator 34, the mechanism 74, the bell cranks 76, the pin 78, the fingered bar 80, and the handles 72 external to the boom in Prescott do not create a dielectric gap sufficient to electrically isolate the control handle from the control assembly and the movable boom to thereby prevent injury to a worker operating the boom. There is no teaching or suggestion in Prescott that the members listed above, alone or in combination, produce a dielectric gap. Such cannot otherwise be assumed.

Additionally, Applicant's recitation of the structure for presenting the dielectric gap should be given patentable weight. Section 2173.05(g) of the MPEP, entitled "Functional Limitations," states that "[a] functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used." Therefore, the Examiner's repeated refusal (both in the parent and present applications) to remark upon, consider, or otherwise adjudge the recitation that the claimed structure provides a dielectric gap sufficient to protect a worker from bodily harm is improper. The Examiner has provided no reference that teaches or suggests a dielectric gap produced by the claimed structure, and therefore, Applicant respectfully submits that the Examiner has not met the requirements necessary for both a section 102 and 103 rejection.

Further, section 903.04 of the MPEP, in discussing how to search for relevant prior art, recognizes that in mechanical inventions, spatial relationships can constitute important aspects of

the invention. Applicant recites a spatial relationship by defining the presence of a dielectric gap between the control handle and the boom. None of the prior art references teach or suggest this feature.

The Examiner also rejected claims 1, 2, and 14-21 under 35 U.S.C. § 103(a) as being unpatentable over either Gilmore or Prescott in view of Luscomb. With respect to the combination of Prescott and Luscomb, Applicant reiterates its arguments about Prescott above. Applicant additionally notes that independent claim 1 recites that the linkage is positioned proximate to the distal end of the boom, and further that the control assembly comprising conductive control valves is positioned proximate to the distal end of the boom. Prescott explicitly teaches away from this combination due to the potential electric harm resulting from contact with the conductive control valves. In Figs. 1 and 9, Prescott illustrates that the valve spools 28,30,32 are positioned at a general middle of the boom. At column 2, lines 57-62, Prescott notes that “[t]he elimination of hydraulic, electric and pneumatic means between bucket 18 and control 24 as mechanism for remote actuation of the latter resolves the problem of electrical danger that is normally inherent in such other types of systems.” In other words, Prescott locates the hydraulic or pneumatic control valves in the general middle of the boom so as to eliminate the electrical danger due to locating the valves at the distal end of the boom, i.e., between the bucket 18 and control 24. Therefore, Applicant submits that Prescott teaches away from the combination of the linkage external to the boom in addition to the control valves being located at the distal end of the boom.

The Examiner cites the Luscombe reference for teaching a handle 52 made of a substantially electrically non-conducting material. Applicant respectfully submits that Luscombe does not teach that the handle is **substantially** non-conducting, and that the handle taught in Luscombe would not provide the needed dielectric gap, as does the present invention. In particular, the handle taught in Luscombe at column 4, lines 17-25 and illustrated in Fig. 4 is substantially electrically conductive. The only non-conducting material of the handle is the “plastic gripping cover . . . positioned over the end portion of the straight hand grip portion 53.” (Column 4, lines 24-25). As best illustrated in Fig. 4, the plastic gripping portion comprises a relatively small portion of the overall handle and is

provided only for the purpose of facilitating gripping of the handle. More importantly, it would be very easy for a worker to come into contact with the conductive component of the handle, as the plastic gripping portion only covers approximately one-half of the extending arm of the handle. Therefore, Applicant submits that it is clear that Luscombe does not provide a substantially non-conductive control handle, as is currently claimed in independent claims 1 and 17. Further, even if the gripping portion is non-conductive, it would not suffice to provide a dielectric gap capable of protecting the user from electrocution.

Applicant also respectfully submits that the Examiner's rejection in view of the combination of Gilmore and Luscombe is incorrect. The cable assembly 50 positioned at the distal or first end of the boom proximate to the bucket is metallic and thus conductive. (Column 4, line 66, referring to the "metallic cable assembly 50" and Fig. 1, illustrating the cable assembly 50 at the distal end of the boom proximate to the bucket). The Examiner simply states that Gilmore shows the claimed apparatus, but the metallic and conductive assembly 50 cannot be the same as the non-conductive linkage claimed in the present claims.

Additionally, Gilmore teaches that the second boom member 5 is made entirely of non-conductive material to electrically isolate the bucket from "the remainder of the boom assembly." (Column 2, lines 20-27). However, Gilmore does not address hazardous phase-to-phase current flow through the boom tip or distal end of the boom, as does the present invention. Furthermore, Gilmore locates the hydraulic cylinders in the boom and platform structure (column 2, lines 31-32), and the valve system is located at an extreme proximal end of the boom (column 2, lines 51-65 and Fig. 1). The valve system is controlled via electric controller 21 located at a generally middle section of the boom. As such, Gilmore does not locate the control valves at the distal end of the boom, as is now claimed in independent claim 17.

Applicant also submits that there is no suggestion or motivation to combine Luscombe with Prescott and Gilmore. The purpose of the non-conducting handle is to prevent phase-to-phase current flow, and both Prescott and Gilmore are concerned only with phase-to-earth current flow. Simply stating that it would have been obvious to modify Prescott to enhance the insulation of the

boomed apparatus does not call out, either explicitly or implicitly, any suggestion or motivation to combine known in the prior art or the knowledge of one with ordinary skill in the art **at the time of the invention**. Instead, the Examiner's proposed suggestion or motivation to combine references the problems addressed by the present invention and thus, uses impermissible hindsight to recreate the invention.

New, independent claim 22 is a means plus function claim that recites the presence of a dielectric gap, with the supporting structure for producing the dielectric gap being the non-conductive linkage. Applicant notes that the dielectric gap is between the control handle and the movable boom.

Applicant has also submitted with this Amendment a Declaration under 37 C.F.R. § 1.132 attesting to evidence of a competitor's product being substantially similar to the commercial embodiment of the present invention. As stated in the accompanying Declaration, the competitor's product was introduced into the market well after the Applicant's commercial embodiment.

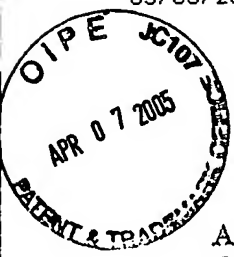
In view of the amended claims and remarks herein, applicant respectfully submits that claims 1,2 and 14-21 are now in allowable condition and requests a Notice of Allowance. In the event of further questions, the Examiner is urged to call the undersigned. Any additional fee which is due in connection with this amendment should be applied against our Deposit Account No. 19-0522.

Respectfully submitted,
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ATTORNEYS FOR APPLICANT(S)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:
CHARD, JOSHUA T.

Serial No.: 10/664,622

Filed: September 17, 2003

ISOLATION MECHANISM FOR
ELECTRICALLY ISOLATING CONTROLS
OF BOOMED APPARATUS

Docket No. 32340-DIV

Group Art Unit No. 3634

Examiner: CHIN SHUE, ALVIN C

Mail Stop Amendment
Post Office Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132

COMES NOW, Judd Clark, and states as follows:

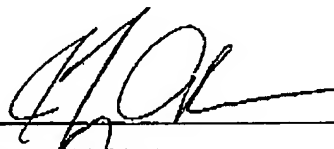
1. I am employed by Altec Industries, Inc. ("Altec") as a principal engineer. I have been employed by Altec as an engineer since June 1998, and I have held my current position since spring 2003.
2. Altec specializes in the design, assembly, and trouble-shooting of aerial devices, digger derricks, and specialty equipment for the electric, utility, telecommunications, and tree care industries. Altec is a leading manufacturer of such devices, and the company sells and services these devices in over 120 countries.
3. My responsibilities as a principal engineer include managing the engineers, drafters, and technical aspects of the product engineering team Altec Midwest Aerials.
4. To the best of my knowledge and belief, P.T.E. Inc. ("PTE") of Mora, Minnesota has produced and sold a non-conductive controller since approximately August 2004. The

controller is to be used with aerial devices, such as the devices manufactured and sold by Altec.

5. Altec purchased a PTE non-metallic controller late in 2004. Upon investigation, I determined that the PTE controller was and currently is structurally and functionally substantially similar to the invention claimed in the referenced application. This statement is being made after a review and study of the PTE controller and its operation with an aerial device. The structural and functional features of the PTE controller were compared to the invention of the present application, which is embodied in Altec's IsoGrip product.
6. With the help of counsel, I have reviewed the claims of the above-identified application and am of the belief that they describe an invention embodied in U.S. Application No. 10/664,622, entitled "Isolation Mechanism for Electrically Isolating Controls of Boomed Apparatus," and filed September 17, 2003.
7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

4/105

Date


By: Judd Clark